

Claims

1. Pressure transducer

- having a pressure sensor (3) located in a housing (2) for
5 converting a pressure to be measured into an electrical
measuring signal (4),
- having a measuring chamber (5) which is separated by means
of a separation membrane (7) from a medium to be measured
(8) and is filled with a pressure transfer fluid in order
10 to transmit the pressure to the pressure sensor (3), and
- having a facility (19) for evaluating the measuring signal,
characterized in that
- the measuring chamber (5) is provided with means (14)
through which its volume can be changed in accordance with
15 an essentially predetermined timing path (20), and
- the evaluation unit (19) is implemented in such a manner
that at least one characteristic value (S5) for a path (23)
presenting itself for the measuring signal (4) in response
to a change in volume can be compared with a corresponding
20 characteristic value (S1) for a reference path (21), and
that a signal indicating a membrane error can be output
depending on differences between the two characteristic
values.

- 25 2. Pressure transducer according to Claim 1, characterized in
that through the evaluation unit (19) a signal indicating a
leak in the separation membrane (7) can be output if the
value (S2) for the measuring signal (4) as a characteristic
value for the path (22) presenting itself for the measuring
30 signal (4) does not reach a corresponding characteristic
value (S1) for the reference path (21) by more than a
predefinable extent within a predefinable delay period
after the beginning of an essentially sudden change of

volume.

3. Pressure transducer according to Claim 1 or 2,
characterized in that through the evaluation unit (19) a
5 signal indicating deposits on the separation membrane (7)
can be output if the maximum value (S5) for the measuring
signal as a characteristic value for the path (23)
presenting itself for the measuring signal exceeds a
corresponding characteristic value (S1) for the reference
10 path (21) by more than a predefinable extent after an
essentially sudden change of volume.
4. Pressure transducer according to one of the preceding
claims, characterized in that through the evaluation unit
15 (19) a signal indicating material erosion on the separation
membrane (7) can be output if the maximum value (S6) for
the measuring signal as a characteristic value for the path
(24) presenting itself for the measuring signal does not
reach a corresponding characteristic value (S1) for the
20 reference path (21) by more than a predefinable extent
after an essentially sudden change of volume.
5. Pressure transducer according to one of the preceding
claims, characterized in that through the evaluation unit
25 (19) a trend statement can be output on the basis of timing
changes in a characteristic value for the path presenting
itself for the measuring signal in the case of temporally
spaced diagnostic operations.
- 30 6. Pressure transducer according to one of the preceding
claims, characterized in that the means for changing the
volume comprise a piezoelectric element (14) which can be
controlled by the evaluation unit (19).